

**Comments on the Chesapeake Bay TMDLs
Water Docket Number EPA-R03-OW-2010-0736
CITY OF NEWPORT NEWS, VIRGINIA**

The City of Newport News, Virginia, joins in the Comments on the Draft Chesapeake Bay TMDL by the Hampton Roads Planning District Commission on behalf of the Hampton Roads Localities with Municipal Separate Storm Sewer Systems, Docket Number EPA-R03-OW-2010-0736, dated November 5, 2010, and incorporates them, and the exhibits thereto, by reference. A copy is filed herewith. In addition, the City of Newport News submits its comments on the proposed Chesapeake Bay TMDLs as follows:

EXECUTIVE SUMMARY OF COMMENTS

EPA has failed to provide the public with sufficient data and documentation needed to review, evaluate, and fully comment on the proposed allocations. The information and data that are available show that the model and model inputs are lacking in the level of precision that should be required of regulatory action with consequences as significant and widespread as the Bay TMDL.

The Phase 5.3 model used to derive the proposed allocations is new, untested, and flawed. In its rush to establish the TMDL by an artificial deadline, EPA has proposed draft allocations without first calibrating the model and verifying the accuracy of the model predictions. In fact, EPA has effectively acknowledged that the model and model inputs are incomplete by announcing its intention to conduct additional model calibration after the TMDL is established.

The flaws in EPA's proposed allocations are compounded in the James River basin by its use of model results that are poorly calibrated against the basin's Chlorophyll-a standards. Analysis shows that EPA's use of poorly calibrated model results and a one-percent non-attainment rate for the Chlorophyll-a standards will have enormous economic consequences for the Hampton Roads localities with little or no quantifiable water quality benefit.

EPA's proposed backstop allocations for the James River basin provide some relief for urban runoff sector, but not nearly enough to provide reasonable assurance that the allocations can be achieved. **The average 54 percent load reduction needed to achieve the backstop allocation for phosphorus would require treatment of approximately 65 percent of the impervious land area in the Hampton Roads Localities at a total estimated cost of \$1,166,000,000.00 in the City of Newport News alone, plus the cost of land acquisition, between now and 2025.**

Although the proposed backstop allocations reflect the difficulty of achieving significant load reductions from the agriculture and onsite septic sectors, they fall far short of reflecting the difficulty of achieving such reductions from the urban runoff

sector. EPA appears to simply assume that the reductions can be achieved because MS4s are subject to federal and state permitting authority under the NPDES, but this assumption fails to recognize that the City owns, on average, only about 35% of the impervious land area within its borders. Therefore, most of the retrofits needed to achieve the load reductions will have to be implemented on private lands over which the Localities have no control in the absence of new development or redevelopment requiring local land use approvals. Eminent domain costs resulting from these requirements will be substantial.

I. INFORMATION REGARDING CITY OF NEWPORT NEWS

A. The City of Newport News, Virginia, is located in the region of the state known as the Virginia Peninsula. The Virginia Peninsula is bordered on the north by the York River, on the South by the James River, and on the East by the Chesapeake Bay and Hampton Roads Harbor. Newport News is located on the south side of the Peninsula.

The City has a population per the last available census records of 193,172, and thus is a Phase I MS4. The area of the City of Newport News is 70 square miles. Some 24% of that is impervious surface, or approximately 17 square miles. Of that 17 square miles, 6 square miles is owned by the City, including streets and sidewalks. The remaining 11 square miles is private property or property owned by the state or federal governments.

B. City MS4 Program –A copy of the portion of the City’s annual report on the MS4 is attached as Exhibit A, which delineates the MS4 Program.

C. Factors Affecting Storm Water Control in City – The City of Newport News is a part of Virginia’s coastal plain, and is generally flat. The range of elevation runs from sea level to 90 feet in the extreme northern part of the City. All major outfalls are in tidal waters. The City is characterized by high clay content soils and a high water table, which renders infiltration techniques to some degree ineffective.

D. The Socio-Economic Impact of the Proposed Urban Runoff Allocations

According to an estimate prepared for the Hampton Roads Planning District Commission by the engineering firm of Greeley & Hansen, the anticipated cost to the City of Newport News of the implementation of the provisions by 2025 will be \$1,166,000,000.00 for infrastructure and additional employees and contractors. This breaks down to approximately \$110 million per year, and would result in an increase of the City’s operating budget of 24.6%. If the City chooses to pay through the Stormwater Utility fee, this fee would have to increase from \$65.40 a year per ERU to \$871.00 per ERU per year, a 1194% increase. This increase will disproportionately affect low income persons, particularly the elderly and disabled persons on fixed incomes.

II. EPA HAS FAILED TO PROVIDE THE CITY OF NEWPORT NEWS WITH SUFFICIENT TIME TO REVIEW, EVALUATE, AND COMMENT ON THE DRAFT TMDLs

Despite the enormous size and complexity of the 2,000 page plus TMDL documents released on Sept. 24, 2010, the socio-economic consequences of the proposed allocations, and the arbitrary nature of EPA's decision to establish the TMDLs by Dec 31, 2010 when it could have given the public additional time to comment. The City does not have sufficient time to adequately review and respond to the TMDLs in detail. Also, the length of time between the deadline for submission of comments, November 8, 2010 and the December 31, 2010 date EPA has set for finalizing the TMDLs indicates that the EPA simply will not have the time to conduct anything more than the most cursory of analysis of the comments. The City of Newport News will defend vigorously any claim of waiver due to failure to submit comments to the TMDLs on the basis that insufficient time was given to adequately respond.

III. OVERVIEW OF MODELS AND MODELING USED TO DERIVE THE PROPOSED URBAN RUNOFF ALLOCATIONS

The Phase 5.3 Chesapeake Bay Watershed Model computer model (CBWM) is enormous, and has been described as one of the world's largest environmental models. The 64,000 square-mile watershed spans roughly one-quarter of the East coast of the United States. However, CBWM is only a component in the larger Chesapeake Bay Program suite of models.

Four major modeling components are used to develop the input data for CBWM. A substantial amount of nitrogen is deposited from the atmosphere and groundwater into the Bay, and land use changes have significant implications for nutrient and sediment loading. All of this data is pre-processed in antecedent models, and then aggregated in a tool called the "Scenario Builder." Also, the CBWM does not include the groundwater component.

IV. EPA HAS FAILED TO PROVIDE THE HR LOCALITIES WITH ACCESS TO INFORMATION NEEDED TO FULLY EVALUATE AND COMMENT ON THE PROPOSED URBAN RUNOFF ALLOCATIONS

A. CBWM Input Mapping Data

To date EPA has not been able or has been unwilling to document the tremendous amount of input data and code required for the TMDL modeling effort. The Virginia Department of Conservation and Recreation requested mapping from the Chesapeake Bay Program Office (CBPO) that would indicate locations of various urban land use categories (such as Impervious High Intensity, Impervious Low Intensity, Pervious High Intensity, and Pervious Low Intensity) used in the Phase 5.3 TMDL modeling. CBPO indicated that significant effort would be required to produce such mapping, and refused to do so. Likewise, there is very little documentation that would allow modelers outside EPA to ascertain how the data was collected and synthesized, which makes working with CBWM a highly unreliable proposition at the state and local levels. More thorough disclosure of documentation is needed, not merely on the model, but just as importantly

on the data. The City of Newport News will defend vigorously any claim of waiver due to failure to submit comments to the TMDLs on the basis that EPA withheld pertinent information to evaluate the program.

B. Scenario Builder

The Scenario Builder was supposed to be available to the modeling community as part of the Chesapeake Bay Modeling Program, but has not yet been released outside EPA. Absent the Scenario Builder, modelers must rely on EPA to process the input data to CBWM, and cannot improve the model with local data. In fact, all of the ‘modeling’ that has been done by the State of Virginia to date is in essence ‘post-processing’ of EPA modeling results rather than independent modeling.

V. FLAWS IN THE MODEL USED TO DERIVE THE PROPOSED ALLOCATIONS

A. The Phase 5.3 CBWM has not been calibrated

EPA claims that the Phase 5.3 CBWM model has been calibrated. Yet 920 square miles of urbanized land have been erroneously entered as ‘forest’ in the model. A recalibration effort is expected to begin in October 2010, but will be too late to be adequately addressed by the 31 December 2010 mandated deadline for final publication of the Chesapeake Bay TMDL. EPA has promoted an “adaptive management approach” in developing this TMDL, thereby creating many moving goalpost situations. There are inherent problems with any calibration effort, and CBWM is no exception. There are many ways to tweak input variables in a complicated model to make the output approximate a series of observed data (a phenomenon known as ‘equifinality’) and CBWM has a massive amount of input variables.

One indication of calibration problems is with sediment loading computations. CBWM cannot adequately match observed data for sediment loading, which held up the release of working sediment limits to the states until a month before their Watershed Implementation Plans (WIPs) were due. To accommodate the schedule, EPA adopted a “pucker factor” approach—to sidestep this problem with the model. If the Phase 5.3 model was adequately calibrated, sediment computations could be handled in a straightforward manner.

Many of the TMDL limits are targeted to pollutant reduction levels that are considerably less than the margin of uncertainty in the modeling process itself. Dr. Kathy Boomer of the Smithsonian Institute has conducted specific research and concluded that the margin of uncertainty in the TMDL models was much greater than the reductions being sought in pollutant loading. Dr. Ken Reckhow of Duke University (who chaired the Chesapeake Bay TMDL Review Committee for the National Academy) has repeatedly cautioned regulators against reporting modeling results without stipulating the

uncertainty. Dr. Reckhow notes that TMDL prediction uncertainty is high, and Chesapeake Bay modelers have had issues with political decision makers being able to understand uncertainty. However, Section 5 of the Draft TMDL states:

“Models have some inherent uncertainty. Because of the amount of data and resources taken to develop, calibrate, and verify the accuracy of the Bay models, the uncertainty of the suite of models is minimized.”

Quite the opposite is true—the amount of data and complexity of the system work to increase the uncertainty, particularly when the source and content of the data have not been disclosed. Such a statement cannot be substantiated, and certainly not with vague assurances that the model is based on “good” or “strong” science.

It is important to note that the mathematical equation for a TMDL is:

TMDL = Sum of Wasteload Allocations + Sum of Load Allocations + Margin of Safety

and the margin of safety is supposed to account for uncertainty in ensuring that the TMDL is effective, but there are errors and uncertainties *in the computation of the load allocations themselves*.

There are very few (perhaps only three or four) knowledgeable technical persons with meaningful CBWM modeling experience in Virginia. For a model that will be used as the basis for billions of dollars in regulatory mandates, the technical community is lacking the checking and validation that comes from widespread use. There is no significant bug reporting and code fixing occurring, and what little modeling is being performed is being done with data that has been distributed from EPA without enough documentation to check its validity. Other computer models, such as the EPA’s own Storm Water Management Model (SWMM), have many years of active, widespread use, and debugging and code fixes occur continuously. The user community helps drive improvements that make SWMM a very well understood and reliable model. Conversely, CBWM is essentially an untested and unapplied model in 2010. The development of CBWM is undoubtedly an ambitious and worthwhile undertaking, but reasonable time has to be given to grow and mature CBWM to the point that it can be reliably used to justify billions of dollars of expense.

B. The Phase 5.3 CBWM does not produce reliable modeling results

EPA distributes the CBWM computer program in un-compiled form, meaning that in order to run the model users must obtain a FORTRAN compiler and generate the executable computer programs from the source code. However there is a known and still unresolved problem with CBWM producing different results when compiled on different computers. Identical input data was run on different computers in August 2010 for the James, York, and Rappahannock Rivers, and CBWM produced significantly different results—with variations as high as 36% in the answers. The reliability of CBWM cannot be corroborated until repeatable results can be produced. EPA is working on this

problem, but its self-imposed TMDL schedule demands do not allow the time required to produce reliable and scientifically verifiable models and modeling results.

C. EPA is using the CBWM on a scale that is beyond its predictive capability

Due to the 64,000 square-mile extent of CBWM, there is an inherent problem of scale when addressing BMPs. CBWM is better suited for overarching computations on larger scales, such as evaluating the effects of fertilizer applications on large segments of the Bay watershed, than it is in evaluating the effects of a particular BMP or group of BMPs on specific sites. EPA staff has acknowledged that the effects of individual, site-specific BMPs cannot be directly addressed in CBWM. Because the model is constructed on such a large scale, numerical effects of BMPs are lumped or aggregated in the modeling input data. This scale problem makes it very difficult for local governments to evaluate the feasibility of costly BMPs such as filtration devices and detention and retention basins that will have to be constructed to achieve water quality improvements. A single retention basin can easily cost millions of dollars, yet its effects cannot be directly isolated and evaluated in CBWM.

D. Existing imperviousness is underestimated in the CBWM

The Phase 5.3 CBWM model was prepared based on satellite photography. Early indications from four Virginia municipalities are that the use of satellite imagery has produced estimates of watershed imperviousness that are approximately 20 percent too low, which has significant implications for the amount of pollution that runs off each watershed. The City of Newport News is one of those four localities. The City has better imperviousness data in their Geographic Information Systems, but the EPA modelers refused to consider, coordinate and collect this information from the localities due to the unrealistic time frame it set.

If existing watershed imperviousness is underrepresented in CBWM, and we know for a fact it is in the City of Newport News, then so will be the existing pollution from its urbanized areas. This inaccuracy could easily result in computed TMDL limits that are unattainable because in order to satisfy their “pollution diet,” municipalities will have to reduce pollution based on modeling data that assumes they are substantially (20 percent) less impervious than they actually are. In other words, if their pollution diet starts by assuming that they have 20 percent less pollution-producing impervious cover than they actually have, then in order to meet their TMDL limits they would have to reduce *all* pollution from that 20 percent *plus* the reductions mandated by the TMDL—which are themselves very difficult to achieve. Refusal to accept more accurate data as the price of meeting an unrealistic deadline sets up the City for failure.

E. There is no groundwater component in the CBWM

The absence of a groundwater component to the model is significant because groundwater transport of nutrients is a major source of pollution in the Bay. The

Chesapeake Bay Program's website estimates that up to 48% of the nitrogen in the Bay can be traced to groundwater. Ironically, many of the Best Management Practices (BMPs) that will be used to satisfy the TMDLs are based on removal of pollutants by infiltration, which is not addressed in the modeling. This lack of a groundwater component in CBWM means that pollutants that are routed into infiltration BMPs disappear from the computational universe—when in reality they are deposited into groundwater that eventually flows into the Bay and this contribution to Bay pollution is thus ignored.

VI. THE FLAWS AND UNCERTAINTY IN EPA'S MODELED PREDICTIONS DO NOT JUSTIFY ALLOCATIONS FOR THE JAMES RIVER MORE STRINGENT THAN THOSE ESTABLISHED IN THE 2005 TRIBUTARY STRATEGY

- A. In 2005, the EPA entered into a Tributary Strategy Agreement which Included TMDLs in the James River Basin. These Strategies will result in pollutant reductions that will amount to 96% of the reductions incorporated in the Tributary Strategy.
- B. In the absence of an accurately calibrated CBWM, verifiable model inputs, and predictions within an acceptable range of uncertainty, EPA should establish the allocations for the James River watershed in the TMDLs based upon the James River Tributary Strategy.
- C. EPA's decision to base the James River allocations on attainment of the numeric Chlorophyll-a standards rather than attainment of the Bay-wide numeric dissolved oxygen standards is flawed.
 - 1. An analysis of the data shows that the Water Quality Model is poorly calibrated against the Chlorophyll-a standard. Consequently, the model results used to derive the James River allocations do not accurately predict the load reductions needed to attain compliance with the James River Chlorophyll-a standards.
 - 2. EPA compounded the consequences of using a poorly calibrated model when it used a one percent Chlorophyll-a standard attainment rate to derive the James River allocations.
 - 3. The model results show that attainment rates between 96 and 99 percent result in changes to in-stream Chlorophyll-a concentrations of between 1 and 2 ug/l, which is well within the 1-4 ug/l margin of error in the EPA-approved Chlorophyll-a test method.

4. The one percent attainment rate used in this case is inconsistent with attainment rates used or approved by EPA in other TMDLs.
5. EPA has failed to offer any justification for its use of a one percent attainment rate in this case, particularly in light its use of a poorly calibrated model.
6. EPA has a certain amount of discretion in determining when models are sufficiently calibrated and in establishing attainment rates. However, EPA abused its discretion when it used a poorly calibrated model and an attainment rate to establish allocations designed to achieve changes in in-stream Chlorophyll-a concentrations that have significant economic consequences and no quantifiable water quality benefit.
7. The costs of implementing the small percentage of improvement between the Tributary Strategies and the James River allocations makes up the greatest percentage of the \$1,166,000.000.00 that the City's estimated cost, when the benefits are minimal. The City relies upon the charts and further explanation of this issue in the Comments on the Draft Chesapeake Bay TMDL by the Hampton Roads Planning District Commission on behalf of the Hampton Roads Localities with Municipal Separate Storm Sewer Systems, Docket Number EPA-R03-OW-2010-0736.
8. The EPA's own calculations and charts show that the James River has a minimal affect on Bay water quality. Thus, the most rigid of the TMDLs is placed on the body of water that has the least impact on the bay. The James River TMDLs are an example of the EPA overreaching its authority as to the Bay clean-up project.

VII. EPA DOES NOT HAVE THE AUTHORITY TO ESTABLISH A DEADLINE IN THE TMDL FOR ACHIEVING THE LOAD REDUCTIONS

The Clean Water Act and EPA's regulations do not give it the authority to establish a 2025 compliance deadline in the TMDLs.

Of all the source sectors covered by the TMDLs, none is affected more by the 2025 deadline than the urban runoff sector because much of the difficulty and cost of achieving the urban runoff load reductions is associated with retrofits independent of redevelopment. Historic re-development rates in the Newport News area fall far short of those that would be needed to achieve the load reductions without forcing the Localities to purchase or condemn land and easements needed for the retrofits and assuming responsibility for retrofit installation and maintenance.

VIII. SOME PROVISIONS AND ASSUMPTIONS OF THE TMDLS ARE CONTRARY TO EXISTING FEDERAL AND VIRGINIA LAW.

Requirements that the City go onto private property to inspect for sources of pollution or to take action on stormwater infrastructure on private property are beyond the City's legal capacity because they are contrary to the Dillon Rule, to the Fourth and Fifth Amendments of the United States Constitution, and Article I, Sections 10 and 11 of the Virginia Constitution. Also, the City has no authority to demand retrofits on state and federal government property. In addition, most federal agencies refuse to pay stormwater fees, claiming that it is an illegal tax on the federal government. In essence, not only is this a massive unfunded mandate that will force local rate-payers to shoulder the burden of paying the federal government's rightful share of the costs, it is in effect a hidden increase in federal taxation on those rate-payers without proper legislative action.

Attempts to delegate enforcement of the Clean Water Act on the City, and to thus control the means and methods of state and local government, are contrary to the federalism doctrine and the Tenth Amendment to the United States Constitution.

IX. CONCLUSIONS AND RECOMMENDATIONS

The Model results that are the basis for the proposed allocations are clearly lacking in the level of precision and certainty required to justify the resulting billions of dollars in costs. EPA professes to be taking an adaptive management approach to the TMDLs; but in reality, EPA is taking an adaptive legal and regulatory approach to the TMDLs by establishing the TMDLs based on incomplete and flawed science and then seeking to supply the missing documentation after the fact.

If EPA is truly committed to an adaptive management approach to the TMDLs, it would adopt them based upon the allocations in the Tributary Strategies and then update the TMDLs when the Phase 5.3 CBWM is fully transparent, developed and calibrated to within an acceptable margin of uncertainty. No time would be lost if EPA's accountability framework remains in place to ensure that progress toward achieving the Tributary Strategy allocations continues while work on the Phase 5.3 CBWM and model inputs are underway. In fact, the approach we recommend likely would achieve our mutual water quality goals for the Bay more efficiently, cost-effectively, and quickly by fostering the federal, state, and local partnership that is so critical to an undertaking of this magnitude. EPA's blind adherence to an artificial deadline for establishing the TMDLs and its heavy-handed and opaque approach to date serves only to undermine that partnership and create distrust and resistance on the part of those who will bear the burden.

EXHIBIT A

ANNUAL REPORT

VPDES PERMIT SECTION I. A. 3.

I.A.3.a ---- Implementation of Program Components

I.A.3.b ---- Proposed Program Changes

I.A.3.c ---- Revision to Assessment of Controls

I.A.3.d ---- Summary of Effectiveness Indicators

I.A.3.e ---- Annual Expenditures

**I.A.3.f ---- Summary of Enforcement, Inspections, and
Public Education**

I.A.3.g ---- Water Quality Improvements or Degradation

I.A.3.h ---- Cooperative or Multi-Jurisdictional Activities

I.A.3.i ---- Annual Nutrient Loadings

I.A.3.j ---- Impacts to Raw Water Sources

ANNUAL REPORT

VPDES PERMIT SECTION I.A.3

I.A.3.a.	The status of implementing the components of the Stormwater Management Program that are established under Parts I.A.1.a., b, c, and d of this permit. In addition to descriptions of each program element's status, the following specific information shall also be submitted:
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I.A.3.a.(1)	A summary of the maintenance activities performed on structural BMPs in accordance with Part I.A.1.a.(1) of this permit:
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Schedule:	<u>Ongoing Activity</u>
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Status: 09/10	Annual Report Period July 1, 2009 – June 30, 2010
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The City continues to offer the Lake Enhancement Program to homeowners associations (HOA) and encourage its use. Throughout FY 10, discussions were held with several HOA's potentially interested in participating in the program. During the reporting period, the King's Charter HOA formally entered into the program.

During the reporting period, the City's Public Works Department spot dredged the following private lakes:

Windemere Lake	105 CY
Indigo Lake	168 CY
Kerry Lake	217 CY
Lake Como	245 CY
Lake Lugano	378 CY
Main Street (Hilton Heights) BMP	742 CY

The City continues to maintain drainage systems collecting stormwater runoff from public property, roads, and highways. The following is a list of activities performed by the Public Works Department and the length of each item.

Roadside Ditches	25,591	LF
Storm Drain Pipe Installed	5,023	LF
Storm Drain Structures Installed	123	
Storm Drain Pipe Flushed	119,169	LF
Storm Structures Cleaned	6,353	

	<p>Back & Side Ditches Maintained 354,066 LF</p> <p>Major Outfalls Maintained 12,657 LF</p>
I.A.3.a.(2)	<p>The progress on plan reviews of future flood management projects implementing useful water quality measures;</p>
Schedule:	<u>Ongoing Activity</u>
Status: 09/10	<p>Annual Report Period July 1, 2009 – June 30, 2010</p> <p>The City continues to review flood management projects to identify opportunities for implementation of water quality treatment measures.</p>
I.A.3.a.(3)	<p>The progress on the City's participation in local or regional public information programs to address the use and disposal of pesticides, herbicides, and fertilizers by commercial applicators and by the general public; to promote, publicize, and facilitate public reporting of the presence of non-storm water discharges into the municipal separate storm sewer system and a summary of the public response to the program; and to educate the public on proper management and disposal of used oil and toxic materials developed in accordance with Part I.A.1.b.(6) of this permit.</p>
Schedule:	<u>Ongoing Activity</u>
Status: 09/10	<p>Annual Report Period July 1, 2009 – June 30, 2010</p> <p>The City's Department of Parks and Recreation continues to monitor and issue permits for licensed applicators regarding the control of pesticides and herbicides within the City.</p> <p>The City's Public Works Department continues to implement the Household Hazardous Waste (HHW) Collection Program which had a total of four (4) collection days during the reporting period. During those four days, 53.85 tons of chemicals and 16.86 tons of miscellaneous electronic waste were collected from 2,525 participants. In connection with the HHW Collection Program, the City also continues to implement the rebate program for the stormwater discharge billing system. 583 households returned rebate cards during the reporting period. The City's year-round computer recycling collection effort yielded approximately 5.65</p>

tons of electronic waste, and the **two (2)** business/office recycling events yielded **29.77 tons** of electronic waste from employees of **ten (10)** City Departments and Businesses.

I.A.3.a.(4)

The number and nature of unauthorized non-storm water discharges or improper disposal practices eliminated under the program by conducting on-site investigations of potential sources of non-storm water discharges developed under Part I.A.1.b.(3) of this permit;

Schedule:

Ongoing Activity

Status:

09/10

Annual Report Period July 1, 2009 – June 30, 2010

The City continues to enforce the Storm Sewer Discharge Ordinance, and the Site Plan and Subdivision Regulations. It also performs field screening and monitoring in order to detect and notify dischargers when a separate VPDES permit is required for discharge into the City's municipal storm sewer system.

The City continues to notify the Department of Conservation and Recreation, (DCR) Division of Soil and Water Conservation on a monthly basis of all Land Disturbance Permits issued by the City that have disturbed areas greater than one (1) acre. During the reporting period, **twenty-two (22)** sites were in this category. See Appendix 1.1 for a list of these sites. On a monthly basis, the City also notifies the DCR regional office of all land disturbing activities that require a permit from the City.

During the reporting period, fifteen **(15)** dry weather screening investigations were performed (see Appendix 1.2). **Five (5) sites, (FSP 4, 11, 97, 127 and 172)** had flow. The results of the sampling performed revealed no indications of the presence of contaminants which would merit additional investigation.

During the reporting period, **fifteen (15)** sanitary sewer overflows were reported to the DEQ-TRO by the City's Public Works Department. All reported overflows were reported, treated and corrected. The Public Works Department continues to use the SSORS computer program to identify and notify agencies of sanitary sewer overflows within the City.

The Hampton Roads Sanitation District (HRSD) responded to **ten (10)** sewer overflows from pump stations during the reporting period. HRSD personnel inspected all sites and appropriate clean-

up measures were employed. HRSD is also utilizing the same computer program, SSORS, for reporting sanitary overflows within the City. See Appendix 1.3 for a list of these sites.

The City's Fire Department responded to **185** calls regarding spills of hazardous materials. The materials encountered during the response ranged from motor oil, gasoline and diesel fuel, to transmission and hydraulic fluids, and anti-freeze.

All spills responded to were effectively treated, removed, and disposed of, including the materials used for the clean-up operation.

<p>I.A.3.a.(5)</p> <p>Schedule:</p> <p>Status: 09/10</p>	<p>A listing of any facilities identified and inspected under Part I.A.1.c.(1) of this permit, a summary of any controls established for these facilities, and the implementation schedule for any controls established for these facilities;</p> <p><u>Ongoing Activity</u></p> <p>Annual Report Period July 1, 2009 – June 30, 2010</p> <p>No new facilities were identified or inspected during the reporting period.</p>
<p>I.A.3.a.(6)</p> <p>Schedule:</p> <p>Status: 09/10</p>	<p>Results of any monitoring performed in accordance with Part I.A.1.c.(2) of this permit.</p> <p><u>Ongoing Activity</u></p> <p>Annual Report Period July 1, 2009 – June 30, 2010</p> <p>No monitoring was performed during the reporting period.</p>
<p>I.A.3.b.</p> <p>Schedule:</p>	<p>Proposed changes to the Stormwater Management Program including those changes that were implemented during the reporting year;</p> <p><u>Ongoing Activity</u></p>

Status:
09/10

Annual Report Period July 1, 2009 – June 30, 2010

No changes to the City's Stormwater Management Program were proposed or implemented during the reporting year.

I.A.3.c.

Revisions, if necessary, to the assessment of controls and to the fiscal analysis reported in the permit application, and an assessment of the effectiveness of new controls established by the Stormwater Management Program;

Schedule:

Ongoing Activity

Status:
09/10

Annual Report Period July 1, 2009 – June 30, 2010

- 1) Assessment of Controls:**
No revision to the assessment of controls is provided for the reporting period.
- 2) Fiscal Analysis:**
In FY2010, the City billed for **\$9,613,695.36** in Stormwater Management service charge fees at the **\$5.45** per ERU rate. A total of **\$9,891,000.00** was appropriated from user fee revenue generated and the Stormwater Management fund balance (see I.A.3.e.).
- 3) Assessment of New Controls:**
No assessment of new controls is being provided for the report period. Appendix 1.4 is a list of Regional Public and Private BMPs.

I.A.3.d.

A summary of the progress toward achieving the goals of the Stormwater Management Program through use of effectiveness indicators. This summary shall address each individual effectiveness indicator.

Schedule:

Ongoing Activity

Status:

09/10

Annual Report Period July 1, 2009 – June 30, 2010

The City continues to gather and enter into the database all pertinent information regarding the effectiveness indicators (see Appendix 2.1). The majority of the information acquired is entered on a monthly basis. There are a few effectiveness indicators; such as spill responses by the Fire Department, miles of drainage facilities serviced, miles of streets swept and tons of material removed by Public Works crews, which are entered yearly.

Greenlands Program:

The City continued to protect over **10,849** acres of greenlands in the form of parks, wetlands, and resource protected areas (see Appendix 3.1). The total numbers for each green area type and hydrologic basin are provided in the Indicator Database.

BMP Implementation:

Five (5) private BMPs were constructed during the reporting period. **Three (3)** BMPs were designed as dry ponds and **two (2)** filterra systems were installed as BMPs. All **Five (5)** BMPs are located in commercial zones. The total numbers for each detention facility and hydrologic basin are provided in the Indicator Database. Additionally, during the reporting period, the City performed a total of **fifteen (15)** BMP inspections which included the inspection of **Six (6)** wet ponds and **Nine (9)** dry ponds. **100 percent** of the BMP inspections occurred in the Lower James River Watershed.

Erosion and Sediment Control:

The City issued **110** Land Disturbance Permits for various construction activities during the reporting period. These included erosion and sediment control plans, agreements-in-lieu-of plans, approved site and subdivision plans, and CBPA encroachments. The total amount of disturbed area for erosion and sediment control plans only was **131.36** acres. Also during this time, the City's Construction Inspection Division made a total of **1,179** inspections with **fourteen (14)** enforcement actions taken.

Flooding and Drainage Responses:

The Stormwater Management Division started and/or completed construction on **fourteen (14)** CIP programmed drainage projects for a total cost of **\$1,959,429.00**, and **five (5)** non-programmed drainage projects for a total cost of **\$236,480.00** during the reporting period.

The City responded to **2,106** drainage complaints by either producing a work order for repair/maintenance or completing an engineering investigation of the problems that included clogged ditches, storm drain cave-ins, mosquito spraying, and erosion. The total numbers for each hydrologic basin are provided in the Indicator Database.

Investigative Monitoring:

The City's Hazard Materials Response Team of the Fire Department responded to **185** spills during the reporting period. The spills were gasoline, diesel, anti-freeze, transmission fluid, or oil. All incidents were treated effectively and all hazardous materials were properly disposed.

The Public Works Department responded to **five (5)** overflows of City pump stations. All overflows were identified, corrected and reported to DEQ-TRO using a new computer program called Sanitary Sewer Overflow Reporting System (SSORS).

The Hampton Roads Sanitation District (HRSD) responded to **ten (10)** overflows within the City. The same reporting computer program utilized by the City was also used by HRSD for reporting purposes.

Operations and Maintenance:

The City's Street Maintenance Division swept **16,700** miles of roads and highways to recover **13,176** tons of material during the reporting period. Also, approximately **ninety-seven (97)** miles of drainage facilities were serviced during the reporting period. At this time the City does not separately track the number of drainage structures serviced or repaired. An updated outfall inventory is included in this report as Appendix 3.2.

Construction Permits and Site Subdivision Plans Approved:

The City approved **fifty-three (53)** site and subdivision plans for construction during the reporting period. The total developed area was **131.36** acres. Of the **131.36** acres developed, **46.42** acres were newly developed and **84.94** acres were redeveloped. Inspections associated with this activity are included with the Erosion and Sediment Control part of this report. The total numbers for each month and hydrologic basin are provided in the Indicator Database.

Public Information and Outreach Programs:

The City did not track riparian restoration this reporting period. The City's Recycling Division of the Department of Public Works provided the information regarding publications distributed during the reporting period. HR Storm provided the bulk of media public outreach as described elsewhere in this report.

I.A.3.e.

Annual expenditures for reporting year and the budget for the year following the annual report.

Schedule:

Ongoing Activity

Status:
09/10

Annual Report Period July 1, 2009 – June 30, 2010

The FY2010 Stormwater Management Operating Budget appropriations were **\$9,891,000.00** and the actual un-audited expenditures for the reporting period were **\$9,308,504.46**.

<u>COST CENTER</u>	<u>FY2010 EXPENDITURES</u>
Engineering/Planning/Inspection	\$1,621,988.07
Maintenance	\$4,764,358.17
Vector Control	\$ 323,836.44
Sundry	\$2,598,321.78
TOTAL	\$9,308,504.46

The outstanding encumbrance balance for FY2010 is **\$582,495.54**.

The FY2011 Stormwater Management Operating Budget appropriations are **\$10,917,000.00**.

<u>COST CENTER</u>	<u>FY2011 Operating Budget</u>
Engineering/Planning/Inspection	\$1,336,337.00

Maintenance	\$5,845,441.00
Vector Control	\$ 416,225.00
Sundry	\$3,318,997.00
TOTAL	\$10,917,000.00

I.A.3.f. Summary describing the number and nature of enforcement actions, inspections, and public education programs.

Schedule: Ongoing Activity

Status:
09/10

Annual Report Period July 1, 2009 – June 30, 2010

Enforcement Actions:

The City's Construction Inspection Division had **fourteen (14)** enforcement actions regarding an erosion and sediment control violation. The violations occurred at private development for unapproved construction activities and/or not having the proper erosion and sediment control measures in place. An initial, verbal "Notice to Comply" was given to the property owner on each separate occasion. A second written notification; or a Notice of Violation, was issued to each of the **fourteen (14)** property owners previously given verbal Notices to Comply. All violations associated with the aforementioned sites were corrected before more stringent enforcement penalties were levied. There were no Stop Work Orders issued by the City's Construction Inspectors for non-compliance with City Ordinances, and no Civil Penalties were assessed.

Inspections:

Details of land disturbing permit activities are shown in I.A.3.d. The City continues to enforce the Soil Removal and Other Land Disturbance Activities Ordinance, Site Plan and Subdivision Regulations, Design Criteria Manual, Chesapeake Bay Preservation Area and Stormwater Control Regulations for the purpose of reducing pollutants in stormwater runoff from all construction sites, whether they are by the City or private developers. Pre-construction meetings are mandatory on all construction sites requiring a Land Disturbance Permit. The City continues to routinely check construction sites and issue Notices to

Comply when necessary. City inspectors made **1,179** inspections during the reporting period.

Public Education:

Due to Budgetary constraints, the City no longer publishes and distributes its yearly environmental calendar. Instead, City staff has ramped-up its efforts with respect to public education/community outreach activities. During the reporting period, staff from the City's Department of Engineering conducted several public meetings and education programs that address stormwater run-off concerns for such entities as:

- Multiple elementary and middle-school classes in the Newport News Public School System;
- The Windemere Farms Homeowners Association;
- Residents of Robinhood Lane; and,
- Residents within the Stony Run Watershed.

Additionally, The City's Public Works Department continues to implement the Household Hazardous Waste (HHW) Collection Program which had a total of **four (4)** collection days during the reporting period. During those four days, **53.85 tons** of chemicals and **16.86 tons** of miscellaneous electronic waste were collected from **2,525** participants.

In connection with the HHW Collection Program, the City also continues to implement the rebate program for the stormwater discharge billing system. **583** households returned rebate cards during the reporting period. The City's year-round computer recycling collection effort yielded approximately **5.65 tons** of electronic waste, and the **two (2)** business/office recycling events yielded **29.77 tons** of electronic waste from employees of **ten (10)** City Departments and Businesses.

I.A.3.g.

Identification of water quality improvements or degradation.

Schedule:

Ongoing Activity

Status:
09/10

Annual Report Period July 1, 2009 – June 30, 2010

During the reporting period **16,700** curb miles of streets were swept, which resulted in **13,176** tons of material being removed and prevented from entering waters of the U.S.

During the **four (4)** Household Chemical Collection Program collection days, material was collected from **2,525** vehicles (see Section I.A.3.f.).

The City's Public Works Department continues to provide services for improving water quality by either spot dredging coves or completely dredging any lakes that serve as stormwater management as BMPs around the City. **Windemere Lake, Indigo Lake, Kerry Lake, Lake Como, Lake Lugano and the Main Street (Hilton Heights) BMP were spot dredged** during the reporting period. A total of **1,855** cubic yards of material was collected and disposed of. Lakes that are scheduled for dredging for the upcoming year:

Brown's Pond (entire lake dredge)
Wendwood Lake (entire lake dredge)
Woodruff Lake (spot dredge coves)
Lakewood Lake (spot dredge coves)

I.A.3.h.

Summary of cooperative or multi-jurisdictional activities the permittee undertook to facilitate compliance with the permit requirements.

Schedule:

Ongoing Activity

Status:
09/10

Annual Report Period July 1, 2009 – June 30, 2010

Appendix 3.3 provides details on multi-jurisdictional cooperative efforts and programs during the report period.

I.A.3.i.

Annual nutrient loadings as indicated in Part I.C.2.j. of this permit.

Schedule:

Ongoing Activity

Status:
09/10

Annual Report Period July 1, 2009 – June 30, 2010

Pollutant loadings for 2010 have not been updated because land use changes within the City have been minimal. Changes in

pollutant loadings for the City of Newport News between fiscal year(s) 2006 to 2010 are estimated to be negligible

I.A.3.j.

A report to address stormwater entering the raw water source to the public water supply and potential impacts these sources may have on the public water supply. Identify any known impacts and the measures taken to minimize or eliminate impacts of similar nature. In addition to submitting the annual report in its entirety to DCR, this section of the annual report shall also be submitted separately to the Virginia Department of Health - Office of Water Programs, 5700 Thurston Drive, Suite 203, Virginia Beach, Virginia 23455.

Schedule:

Ongoing Activity

**Status:
09/10**

Annual Report Period July 1, 2009 – June 30, 2010

The City's Public Utilities Department continues to enforce the City's Reservoir Protection Ordinance regarding any development in water supply watersheds within the City's limits (Lee Hall, Skiff's Creek and Harwood's Mill Reservoirs). The Department issues Runoff Control Permits (RCP), is involved with the inspection of construction projects, advises developers with respect to the requirements and design of stormwater detention facilities and applicable water quality buffers for all development within water supply watersheds and conducts water quality monitoring in reservoirs and watersheds.

The following is the Department's involvement within the City of Newport News for the reporting period:

- In conjunction with Virginia Dam Safety regulations, awarded final design contract for upgrades to primary and secondary spillways at Lee Hall Reservoir.
- Coordinated design and inspection of drainage improvements for headwaters of Poquoson River.
- Coordinated with VDOT on the construction of seven BMP's relating to widening of Fort Eustis Boulevard.
- Expanded monthly reservoir monitoring program to include routine and special project chlorophyll A monitoring.
- Initiated a performance assessment of multi-stage, off-stream BMP system for mixed use residential, urban

and forested watershed. Assessment is being conducted in cooperation with graduate students at Christopher Newport University.

- Continued to monitor tributary and reservoir water quality to resolve elevated pH runoff from Industrial facility in the Skiffes Creek watershed.
- Re-graded and repaired upstream face of Skiffes Creek Reservoir dam.
- Continued work on stream condition assessment and inventory.
- Department's Forestry Operations Division continues to manage forested stands and stream buffers for healthy watersheds, thin forested areas, maintain trails/dams/wetland mitigation sites/wet ponds and remove trash/debris from watersheds.
- Operated and maintained remote camera monitoring program to identify illicit dumping at fire-trail gates.
- Initiated conceptual design coordination with Newport News Williamsburg International Airport to upgrade stormwater drainage facilities discharging to Harwoods Mill Reservoir.
- Conducted debris removal at headwaters to Jones Run south of Interstate 64.